UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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ART UNIT	PAPER NUMBER
2164	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8 May 2008*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-31* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on 8 May 2008, claims 1-3, 9-10, 13-14, 16, 18-23, 25-31 are amended. Claims 1-31 are pending in the application.

Claim Objections

2.   Claims 12-14 and 21 are objected to because of the following informalities:

Claims 12-14 all have limitations of the form "computer readable program code aiding" in performing a step. "Aiding" in performing a step is different than performing that step. Thus, it is unclear if these steps are positively recited.

In addition to this, the fourth limitation of claim 14 states "computer readable program code aiding in communicating with said server to process said COMMIT or ROLLBACK request, and upon successful processing, and". It is unclear why an 'and' exists at the end of the statement, given that 'upon successful processing' introduces a limitation that will occur if a condition is fulfilled.

Claim 21 also has an unnecessary 'and'.

Specification

3.   Claims 12-17 and 26-31 are objected to because of the following informalities:

The claims are directed towards a 'computer usable medium having computer readable program code embodied therein". However, a review of the specification can find no recitation of the phrase "computer usable medium". Thus, it is unclear exactly what the claimed subject matter is directed towards.

It is noted that the specification provides support for the phrase "computer storage medium" (see page 17, lines 7-13). It is noted that the use of this phrase would correct the claims and provide clear statutory support for the invention.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of claim 4 refers to "said recover decision". However, claim 1 stipulates that only one of a COMMIT, ROLLBACK, or RECOVER decision need occur. Thus, the claimed subject in claim 4 may not always occur.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which
said subject matter pertains. Patentability shall not be negatived by the manner in which the
invention was made.

7.   Claim 1-2, 4, 6-13, 16-20, and 24-25 are rejected under 35 U.S.C. 103(a)

as being unpatentable over <u>Benson et al</u>. (US Pre-Grant Publication

2003/0200212) in view of <u>Cotner et al</u>. (US 5,884,327).

        As to claim 1, <u>Benson et al</u>. teaches a computer-based method

implementing a robust 2-phase commit protocol between a client and a server via

a relational table and software facilitating communications with said client and

said server, said relational table storing a list of potentially indoubt units of work

(see abstract, paragraphs [0032]-[0034]), said method comprising the steps of:

        (a) receiving an invocation from said client for a first phase commit for a

transaction representing a unit of work (see paragraph [0023]);

        (b) inserting an entry in said relational table corresponding to said unit of

work and transmitting an instruction to said server to prepare to commit for said

transaction (see paragraph [0023]),

        <u>Benson et al</u>. does not explicitly teach wherein said inserted entry

indicating said unit of work is potentially an indoubt entry

        <u>Cotner et al</u>. teaches wherein said inserted entry indicating said unit of

work is potentially an indoubt entry (see 13:32-55)

        <u>Benson et al</u>. as modified teaches:

(c) receiving a request from said client to perform any of the following decisions: a COMMIT, a ROLLBACK, or a RECOVER (see <u>Benson et al</u>. paragraph [0064]. Clients may initiate rollbacks); and

(d) updating said relational table after execution of said request (see <u>Benson et al</u>. paragraph [0030]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified <u>Benson et al</u>. by the teachings of <u>Cotner et al</u>., since <u>Cotner et al</u>. teaches a system that "allows a two-phase commit protocol to work properly, even with the client acting as the coordinator does not have a log to record two-phase state information" (see Abstract).

As to claim 2, <u>Benson et al</u>. as modified teaches wherein received request is a COMMIT or a ROLLBACK decision, and said method comprises the steps of:

communicating with said server and processing said COMMIT or ROLLBACK request, and upon successful processing (see <u>Benson et al</u>. paragraph [0064]),

deleting an entry corresponding to said COMMIT OR ROLLBACK request in said relational table (see <u>Benson et al</u>. paragraph [0064]).

As to claim 4, <u>Benson et al</u>. as modified teaches wherein said server is a database cluster and said software supports execution of said recover decision even if one or more members of the database cluster are unavailable (see

Cotner et al. 5:12-26 and 5:64-67. Even if a log is unavailable, a transaction can

still be recovered).

As to claim 6, Benson et al. as modified teaches wherein said relational

table is a SQL table and said step of inserting an entry in said relational table is

performed via issuing a SQL INSERT instruction (see Benson et al. paragraphs

[0032]-[0034]. An SQL table is generated into which rows are inserted).

As to claim 7, Benson et al. as modified teaches wherein said relational

table is stored in said server and a request for said insertion of entry in said

relational table is placed on a network message that includes said instruction to

said server to prepare to commit for said transaction (see Benson et al.

paragraph [0022]-[0023]).

As to claim 8, Benson et al. as modified teaches wherein said method is

implemented across networks (see Benson et al. paragraphs [0022]-[0023]).

As to claim 9, Benson et al. as modified teaches wherein said across

networks element comprises any of, or a combination of, the following: local are

network, wide area network, wireless network, or the Internet (see Benson et al.

paragraph [0022]).

As to claim 10, <u>Benson et al</u>. as modified teaches wherein steps (a)

through (d) are performed over a separate network connection, said separate

network connection separate from a network connection over which requests for

updating entries in said relational table are placed to avoid starting a new unit of

work (see <u>Cotner et al</u>. 7:40-50 and Figure 4. There exist separate network

connections for requests).

As to claim 11, <u>Benson et al</u>. as modified teaches wherein said method

comprises the step of mapping said 2-phase protocol onto a protocol supported

by said server (see <u>Benson et al</u>. paragraphs [0022]-[0023]).

As to claim 12, please refer to the rejection of claim 1, above.

As to claim 13, please refer to the rejection of claim 2, above.

As to claim 16, please refer to the rejection of claim 6, above.

As to claim 17, please refer to the rejection of claim 7, above.

As to claim 18, <u>Benson et al</u>. teaches a computer-based method

implementing a robust 2-phase commit protocol between a transaction manager

and a database cluster via software facilitating communications with said

transaction manager and said database cluster, said computer-based method

comprising the steps of:

(a) creating an SQL table for storing a list of potentially indoubt units of

work (see abstract, paragraphs [0032]-[0033])

(b) receiving an invocation from said transaction manager for a first phase

of commit for a transaction representing an unit of work (see paragraph [0023]);

Benson et al. does not explicitly teach:

inserting, via an SQL INSERT instruction, an indoubt entry in said SQL

table corresponding to said unit of work

Cotner et al. teaches:

inserting, via an SQL INSERT instruction, an indoubt entry in said SQL

table corresponding to said unit of work (see 13:32-55)

Benson et al. as modified teaches:

and transmitting an prepare to commit instruction to said database cluster,

said SQL INSERT instruction and said prepare to commit instruction placed on

one network message to minimize cost (see Benson et al. paragraphs [0023] and

[0032]);

(d) receiving a request from said transaction manager to perform any of

the following decisions: a COMMIT, a ROLLBACK, or a RECOVER (see Benson

et al. paragraph [0064]) and

(e) updating said SQL table after execution of said request (see Benson et

al. paragraph [0030]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Benson et al. by the teachings of Cotner et al., since Cotner et al. teaches a system that "allows a two-phase commit protocol to work properly, even with the client acting as the coordinator does not have a log to record two-phase state information" (see Abstract).

As to claim 19, Benson et al. as modified teaches communicating with said database cluster and processing said COMMIT or ROLLBACK request (see Benson et al. paragraph [0064]), and upon successful processing,

deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table via an SQL DELTE instruction (see paragraph [0064]. An SQL table is used in Benson et al. Thus, an instruction to delete is inherently an 'SQL DELETE instruction').

As to claim 20, Benson et al. as modified teaches wherein steps (a) through (e) are performed over a separate network connection, said separate network connection separate from a network connection over which said SQL DELETE instructions are placed to avoid starting a new unit of work (see Cotner et al. 7:40-50 and Figure 4. There exist separate network connections for requests).

As to claim 24, Benson et al. as modified teaches wherein said method is implemented across networks (see Benson et al. paragraphs [0022]-[0023]).

As to claim 25, Benson et al. as modified teaches wherein said across

networks element comprises any of, or a combination of, the following: local area

network, wide area network, wireless network, or the Internet (see Benson et al.

[0022]-[0023]).

8.   Claims 3, 14, 21-22, 26-27, and 29-31 are rejected under 35 U.S.C.

103(a) as being unpatentable over Benson et al. (US Patent 6,873,995) in view

of Cotner et al. (US 5,884,327), and further in view of Freund et al. (US

5,923,833)

As to claim 3, Benson et al. as modified teaches the method as per claim

1.

Benson et al. does not explicitly teach:

wherein said received request is a RECOVER decision, and said method

comprises the steps of:

Freund et al. teaches:

wherein said received request is a RECOVER decision (see 11:22-35),

Benson et al. as modified teaches and said method comprises the steps

of::

querying said relational table to identify a list of indoubt units of work (see

Freund et al. 11:22-35);

transmitting said list of indoubt units of work to said client (see <u>Freund et</u> <u>al</u>. 11:22-35);

receiving a COMMIT or ROLLBACK decision from said client (see <u>Freund</u> <u>et al</u>. 11:22-35);

communicating with said server to process said COMMIT or ROLLBACK request, and upon successful processing (see <u>Freund et al</u>. 11:22-35),

deleting an entry corresponding to said COMMIT or ROLLBACK request in said relational table (see <u>Freund et al</u>. 11:22-35 and <u>Benson et al</u>. paragraph [0045]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified <u>Benson et al</u>. by the teachings of <u>Freund et al</u>., since <u>Freund et al</u>. teaches that "For example, in the case of a bank automated teller machine (ATM) from which a customer seeks to withdraw money, the actions of issuing the money, reducing the balance of money on hand in the machine and reducing the customer's bank balance must all occur or none of them must occur. Failure of one of the subordinate actions would lead to inconsistency between the records and actual occurrences" (see 1:15-23).

As to claim 14, please refer to the rejection of claim 3, above.

As to claim 21, <u>Benson et al</u>. teaches a computer-based method as per claim 18.

Benson et al. does not explicitly teach wherein said received request is a

RECOVER decision,

Freund et al. teaches wherein said received request is a RECOVER

decision (see 11:22-35),

Benson et al. as modified teaches:

said method comprising the additional steps of:

querying said SQL table to identify a list of indoubt units of work (see

Freund et al. 11:22-35);

transmitting said list of indoubt units of work to said transaction manager

(see Freund et al. 11:22-35);

receiving a commit or rollback decision from said transaction manager

(see Freund et al. 11:22-35);

communicating with said database cluster to process said COMMIT or

ROLLBACK request, and upon successful processing (see Freund et al. 11:22-

35), and

deleting an entry corresponding to said COMMIT or ROLLBACK request

in said SQL table via a SQL DELETE instruction (see Freund et al. 11:22-35 and

Benson et al. paragraph [0045]. Benson et al. teaches a table operated on using

SQL).

Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to have modified Benson et al. by the teachings

of Freund et al., since Freund et al. teaches that "For example, in the case of a

bank automated teller machine (ATM) from which a customer seeks to withdraw

money, the actions of issuing the money, reducing the balance of money on hand

in the machine and reducing the customer's bank balance must all occur or none

of them must occur. Failure of one of the subordinate actions would lead to

inconsistency between the records and actual occurrences" (see 1:15-23).

As to claim 22, Benson et al. as modified teaches wherein steps of

querying, transmitting, receiving, and communicating are performed over a

separate network connection, said separate network connection separate from a

network connection over which said SQL DELETE instructions are placed to

avoid starting a new unit of work (see Cotner et al. 7:40-50 and Figure 4. There

exist separate network connections for requests)

As to claim 26, Benson et al. an article of manufacture comprising

computer usable medium having computer readable program code embodied

therein implementing a 2-phase commit protocol between a client and a server

comprising computer-readable program code (see abstract, paragraphs [0032]-

[0034]), said medium comprising:

computer readable program code implementing a first module invoked to

create a relational table in said server to store potential indoubt units of work (see

abstract, paragraphs [0032]-[0034]);

Benson et al. does not explicitly teach:

computer readable program code implementing a second module invoked

to insert or delete indoubt entries of work in said relational table,

Cotner et al. teaches:

computer readable program code implementing a second module invoked

to insert or delete indoubt entries of work in said relational table (see 13:32-55),

Benson et al. as modified teaches:

wherein insertions of indoubt entries are performed if an invocation is

received from said client for a first phase of commit for a transaction representing

a unit of work (see Cotner et al. 13:32-55 and Benson et al. paragraphs [0022]-

[0023]); and

wherein deletions of indoubt entries are performed upon successful

processing of a COMMIT or ROLLBACK decision (see Cotner et al. 13:32-55 and

Benson et al. paragraph [0045]); and

Benson et al. as modified does not teach:

computer readable program code implementing a third module invoked

upon receiving a recover instruction from said client, said third module extracting

a list of indoubt units of work from said relational table and transmitting said

extracted list to said client, wherein said client inspects said list and issues a

COMMIT or ROLLBACK decision to said middleware regarding said indoubt units

of work in said list.

Freund et al. teaches:

computer readable program code implementing a third module invoked

upon receiving a recover instruction from said client, said third module extracting

a list of indoubt units of work from said relational table and transmitting said

extracted list to said client, wherein said client inspects said list and issues a

COMMIT or ROLLBACK decision to said middleware regarding said indoubt units

of work in said list (see Freund et al. 11:22-35 and Benson et al. paragraph

[0045]).

Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to have modified Benson et al. by the teachings

of Cotner et al., since Cotner et al. teaches a system that "allows a two-phase

commit protocol to work properly, even with the client acting as the coordinator

does not have a log to record two-phase state information" (see Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to have modified Benson et al. by the teachings

of Freund et al., since Freund et al. teaches that "For example, in the case of a

bank automated teller machine (ATM) from which a customer seeks to withdraw

money, the actions of issuing the money, reducing the balance of money on hand

in the machine and reducing the customer's bank balance must all occur or none

of them must occur. Failure of one of the subordinate actions would lead to

inconsistency between the records and actual occurrences" (see 1:15-23).

As to claim 27, please refer to the rejection of claim 4.

As to claim 29, please refer to the rejection of claim 6.

As to claim 30, please refer to the rejection of claim 7.

As to claim 31, please refer to the rejection of claim 11.

9.   Claim 5, 15, and 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over <u>Benson et al</u>. (US Patent 6,873,995) in view of (<u>Cotner et al</u>.

US 5,884,327), and further in view of <u>Hoffman et al</u>. (US Patent 5,261,102).

As to claim 5, <u>Benson et al</u>. as modified teaches the method of claim 1.

<u>Benson et al</u>. does not explicitly teach wherein said relational table

specifies row-level locking

<u>Hoffman et al</u>. teaches wherein said relational table specifies row-level

locking (see 5:45-56).

Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to have modified <u>Benson et al</u>. by the teachings

of <u>Hoffman et al</u>., since <u>Hoffman et al</u>. teaches "Both the Database Manager and

Database Services are well known applications for the PS/2 computer and need

not be described in detail".

As to claims 15 and 23, please refer to the rejection of claim 5 above.

10.   Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over

<u>Benson et al</u>. (US Patent 6,873,995) in view of <u>Cotner et al</u>. (US 5,884,327), and

further in view of <u>Freund et al</u>. (US 5,923,833), and further in view of <u>Hoffman et

al</u>. (US Patent 5,261,102).

As to claim 28, <u>Benson et al</u>. as modified teaches the article of manufacture of claim 26.

<u>Benson et al</u>. does not explicitly teach wherein said relational table specifies row-level locking.

<u>Hoffman et al</u>. teaches wherein said relational table specifies row-level locking (see 5:45-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified <u>Benson et al</u>. by the teachings of <u>Hoffman et al</u>., since <u>Hoffman et al</u>. teaches "Both the Database Manager and Database Services are well known applications for the PS/2 computer and need not be described in detail".

Response to Arguments

11.   Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that "Benson teaches away from the invention by using two tables and further makes no mention of indoubt entries". In response to this argument, it is noted that nothing in the claimed subject matter precludes the use of multiple tables.

In regards to "indoubt entries", it is also noted that <u>Cotner et al</u>. is now relied upon to clearly teach wherein 'indoubt entries' are stored in the database.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to CHARLES D. ADAMS whose telephone

number is (571)272-3938. The examiner can normally be reached on 8:30 AM -

5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The

fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

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Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

/C. D. A./
Examiner, Art Unit 2164

/Charles Rones/
Supervisory Patent Examiner, Art Unit 2164